

**ABSTRACT OF THE DISCLOSURE**

A transmission signal and a pilot signal are predistorted by a digital predistorter 13 by use of a power-series model, and the predistorted output is converted by a digital-analog converter 14 to an analog signal. The analog  
5 signal is up converted by a frequency converter 15 to an RF-band signal, which is transmitted after being power-amplified by a Doherty amplifier 16. The pilot signal is extracted by a pilot signal extractor 17 from the output from the Doherty amplifier, and the extracted pilot signal is down converted by a frequency converter 18 to a baseband signal. The baseband pilot signal  
10 is converted by an analog-digital converter 19 to a digital pilot signal. A control part 21 detects an odd-order distortion component from the digital pilot signal, and based on the detected result, controls parameters of the digital predistorter.

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